

CLAIMS

- 1.(cancelled) A wall frame structure having an enclosing framework, including a plurality of pairs of load-bearing, substantially upright strut members having intermediate longitudinal portions thereof in mutually inclined relation, contained within said framework, and subject to longitudinal compressive loading.
- 2.(currently amended) The ~~frame-structure~~ structural panel unit as set forth in Claim [1] 19, wherein said ~~strut~~ individual members are of slender section modulus, prone to individually buckle under said longitudinal compressive loading of said individual members, said ~~strut~~ member pairs having their individual outer ends mutually joined, and being mutually joined and each said individual member of said pairs of members being substantially immobilized at ~~a~~ locations intermediate their respective ends, to significantly reduce their respective tendency to deform under load.
- 3.(currently amended) The ~~frame-structure~~ structural panel unit as set forth in Claim 2, wherein side-wall members of said frame ~~structure~~ laterally constrain said ~~strut~~ individual members that are in contacting relation with said frame side-wall members.
- 4 (currently amended) The ~~frame-structure~~ structural panel unit as set forth in Claim [1] 19, wherein upper end and lower end portions of each of said pairs of members are secured to each other, and at least one said intermediate transition portion ~~intermediate said end portions of a pair of said strut~~ members ~~are secured to each other, and~~ is fastened in predetermined location(s) within said framework.

5. (currently amended) The ~~frame-structure~~ structural panel unit as set forth in Claim [1] 19, wherein the upper and lower ends of a pair of said individual members are secured to each other, and attached to ~~an adjoining, laterally extending member of said framework.~~ portions of said rectangular enclosure.

6. (currently amended) The ~~frame-structure~~ structural panel unit as set forth in Claim 5, wherein ~~the upper and lower~~ said ends of a said pair of said ~~strut~~ individual members are glued to each other.

7. (currently amended) The ~~frame-structure~~ structural panel unit as set forth in Claim [1] 19, wherein said ~~frame-structure~~ rectangular enclosure includes including face sheets in enclosing relation with said ~~strut~~ pairs of members, wherein said ~~strut~~ pairs of members ~~have~~ having edge portions thereof secured to adjoining surface portions of said face sheets.

8. (currently amended) The ~~frame-structure~~ structural panel unit as set forth in Claim 7, wherein said ~~strut~~ member edge portions are glued to said adjoining surface portions of said face sheets.

9. (currently amended) The ~~frame-structure~~ structural panel unit as set forth in Claim 2, wherein a said pair of ~~struts~~ individual members are ~~being~~ laterally constrained at their centre by contact with adjoining pairs of said ~~struts~~ members .

10. (currently amended) The ~~frame-structure~~ structural panel unit as set forth in Claim 2, wherein one said ~~strut~~ individual member is ~~being~~ laterally constrained substantially at its centre by contact with an adjoining portion of said ~~framework~~ frame .

11. (currently amended) The ~~frame-structure~~ structural panel unit as set forth in Claim 10, wherein said one ~~strut~~ individual member is joined to an adjoining portion of said ~~framework~~ frame by fastening means selected from the group consisting of nails, staples and glue, and combinations thereof.

12. (currently amended) The ~~frame-structure~~ structural panel unit as set forth in Claim [2] 19, including a laterally extending tension member securing said intermediate transition portions of at least some of said ~~struts~~ individual members in mutually adjoined back-to-back relation .

13. (currently amended) The ~~frame-structure~~ structural panel unit as set forth in Claim [10] 12, wherein said tension member is being selected from the group consisting of strapping, wire and plastic filament.

14. (currently amended) The ~~frame-structure~~ structural panel unit as set forth in Claim [1] 19, wherein said ~~struts~~ individual members are selected from the material group consisting of plywood, wood, particle board, wafer board , low, medium and high density fiberboard panels, and Hardboard, laminated panels and fiberglass, metal and plastic.

15. (currently amended) The ~~frame-structure~~ structural panel unit as set forth in Claim 14, wherein said metal and plastic ~~struts~~ individual members ~~having~~ have a profiled cross section with side flanges extending for at least a portion of their length, and substantially planar end and centre portions.

16. (currently amended) The ~~frame-structure~~ structural panel unit as set forth in Claim 15, wherein said ~~struts~~ individual members each ~~having~~ has at least two portions of its length with said profiled cross section.

17. (currently amended) The ~~frame-structure~~ structural panel unit as set forth in Claim 15, wherein said ~~strut~~-individual members each has ~~having~~ at least four portions of its length with said profiled cross section.

18. (currently amended) The ~~frame-structure~~ structural panel unit as set forth in Claim[1] 19, said contacting intermediate transition portions of said individual members forming substantially triangular shaped interstices adjacent their contacting portions; wherein having plastic foam is located in contacting supporting relation with said ~~strut~~ intermediate-~~portions~~ individual members at said interstices, in use to resist lateral deformation of said ~~struts~~ individual members when said individual members are subjected to said compressive loading.

19. (new) A structural panel unit for use in building structures, consisting of an outer frame forming the walls of a rectangular enclosure; reinforcing means comprising a plurality of pairs of individual members substantially uniformly distributed throughout the rectangular enclosure, the ends of said pairs of members abutting said enclosure walls; each individual member of said pairs of members having a first portion of its length inclined in mutually divergent relation from the other said individual member of said pair; each said member having an intermediate transition portion, and a second portion of its length adjoining said transition portions inclined in mutually convergent relation with the other said individual member, to form a substantially diamond-shaped enclosure; said diamond-shaped enclosures extending across the length and breadth of said rectangular enclosure, being bounded by a plurality of substantially triangular-shaped enclosures; said intermediate transition portions of a plurality of said members being in contacting, back-to-back, mutual supporting relation.